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Committee on the Peaceful Uses of Outer Space

Information furnished in conformity with the Convention on Registration of Objects Launched into Outer Space

Note verbale dated 29 March 2018 from the Permanent Mission of France to the United Nations (Vienna) addressed to the Secretary-General

The Permanent Mission of France to the United Nations (Vienna), in accordance with the provisions of the Convention on Registration of Objects Launched into Outer Space, adopted on 12 November 1974, and of General Assembly resolution 62/101, adopted on 17 December 2007, has the honour to submit the following information on space objects registered by France in 2017.

In 2017, France registered 16 space objects (two satellites, of which one was registered on behalf of the European Telecommunications Satellite Organization (Eutelsat), and 14 launcher elements) in the French National Register of Objects Launched into Outer Space, which is maintained by the National Centre for Space Studies (CNES) on behalf of the State, in accordance with articles 12 and 28 of Law No. 2008-518 of 3 June 2008, pertaining to space operations, articles 14-1 to 14-6 of Decree No. 84-510 of 28 June 1984, pertaining to CNES, and the provisions of the order of 12 August 2011 establishing the list of information needed to identify a space object.

The Permanent Mission of France has the honour to note that the following information is provided in the annexes to the present note:

- Pursuant to article IV, paragraph 1, of the Registration Convention, a list of satellites registered by France (annex I, table 1) and a list of space objects launched into orbit and registered by France (annex I, table 2)
- Pursuant to article IV, paragraph 3, of the Registration Convention, a list of objects registered by France that have re-entered the atmosphere (annex II)
- Pursuant to article IV, paragraph 2, of the Convention, additional information from the French National Register of Objects Launched into Outer Space relating to satellites operating in low Earth orbit (annex III, table 1), satellites operating in geostationary orbit (annex III, table 2) and satellites that remain in orbit but are no longer operational (annex III, table 3).

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As at 31 December 2017, the French National Register contained 367 space objects, of which 129 were satellites (67 were operational) and 238 were component parts of launchers (launcher stages and carrier structures). It should also be noted that, of the above-mentioned 129 satellites:

- Forty-six are listed as Eutelsat satellites, in accordance with an agreement that remains in force between France and Eutelsat-IGO under which the satellites of Eutelsat are registered by France (19 satellites were launched between 1983 and mid-2001, of which 4 are still operated by Eutelsat S.A.)
- The second-generation Globalstar satellites, of which there are currently 24, are now registered by France, in accordance with article 9 of the Order of 29 August 2011
- The Eutelsat 48A satellite registered by France, launched on 21 November 1996, was decommissioned on 9 May 2017 (moved into graveyard orbit).

Annex I

Information on space objects launched by France in 2017*

Table 1
Registration data on satellites launched by France in 2017

				Basic orbital characteristics						Remarks	
International registration number	*Date of the launch*	*Launch site*	*Name of the launcher*	*Nodal period (minutes)*	*Inclination (degrees)*	*Apogee (km)*	*Perigee (km)*	*General function of the space object*	*Launch number*	*Satellites*	*State organization*
2017-036AD	23 June 2017	Sriharikota, India	PSLV	94.68	97.5	512	494	Education satellite	..	ROBUSTA 1B	France
2017-029B	1 June 2017	Kourou, French Guiana	Ariane 5 ECA	1 436	0	35 793	35 779	Telecommunications satellite	VA237	Eutelsat 172B	France

Table 2
Registration data on space objects launched by France in 2017

				Basic orbital characteristics						Remarks	
International registration number	*Date of the launch*	*Launch site*	*Name of the launcher*	*Nodal period (minutes)*	*Inclination (degrees)*	*Apogee (km)*	*Perigee (km)*	*General function of the space object*	*Launch number*	*Launched space object*	*State organization*
2017-006B	28 January 2017	Kourou, French Guiana	Soyuz ST	627.42	5.45	41 987.00	6 567.20	Fregat stage	VS16	Fregat	France
2017-007C	14 February 2017	Kourou, French Guiana	Ariane 5 ECA	634.41	3.993	35 908.1	250	ESC-A cryogenic upper stage	VA235	ESC-A	France
2017-007D	14 February 2017	Kourou, French Guiana	Ariane 5 ECA	633.67	3.992	35 869.1	251	SYLDA carrier structure	VA235	SYLDA	France
2017-023C	4 May 2017	Kourou, French Guiana	Ariane 5 ECA	634.34	3.995	35 904.1	250.6	ESC-A cryogenic upper stage	VA236	ESC-A	France
2017-023D	4 May 2017	Kourou, French Guiana	Ariane 5 ECA	634.90	3.996	35 934.0	249.5	SYLDA carrier structure	VA236	SYLDA	France
2017-026B	18 May 2017	Kourou, French Guiana	Soyuz ST	587.48	6.19	37 740.24	23 235.7	Fregat stage	VS17	Fregat	France

* The data are reproduced in the form in which they were received.

International registration number	Date of the launch	Launch site	Name of the launcher	Basic orbital characteristics				General function of the space object	Launch number	Remarks	
				Nodal period (minutes)	Inclination (degrees)	Apogee (km)	Perigee (km)			Launched space object	State organization
2017-029C	1 June 2017	Kourou, French Guiana	Ariane 5 ECA	633.46	5.999	35 860.2	249.0	ESC-A cryogenic upper stage	VA237	ESC-A	France
2017-029D	1 June 2017	Kourou, French Guiana	Ariane 5 ECA	632.43	5.998	35 806.2	250.2	SYLDA carrier structure	VA237	SYLDA	France
2017-040C	28 June 2017	Kourou, French Guiana	Ariane 5 ECA	634.62	2.996	35 919.6	249.3	ESC-A cryogenic upper stage	VA238	ESC-A	France
2017-040D	28 June 2017	Kourou, French Guiana	Ariane 5 ECA	634.05	2.996	35 889.2	250.5	SYLDA carrier structure	VA238	SYLDA	France
2017-044C	2 August 2017	Kourou, French Guiana	VEGA	93.64	97.199	457.1	447.7	VESPA carrier structure	VV10	VESPA	France
2017-059C	29 September 2017	Kourou, French Guiana	Ariane 5 ECA	632.62	5.999	35 815.7	250.2	ESC-A cryogenic upper stage	VA239	ESC-A	France
2017-059D	29 September 2017	Kourou, French Guiana	Ariane 5 ECA	633.70	6.001	35 872.3	249.2	SYLDA carrier structure	VA239	SYLDA	France
2017-079E	12 December 2017	Kourou, French Guiana	Ariane 5 ES	831.79	57.052	29 307.35	29 288.65	EPS storable propellant stage	VA240	EPS	France

Annex II

Information provided by France in conformity with article IV, paragraph 3, of the Convention on Registration of Objects Launched into Outer Space on space objects registered by France that re-entered the Earth's atmosphere in 2017*

International registration number	*Date of the launch*	*General function of the space object*	*Date of atmospheric re-entry*
2007-036C	14 August 2007	Ariane 5 SYLDA	7 January 2017
2015-070B	3 December 2015	Attitude Vernier Upper Module (AVUM) stage	16 March 2017
2002-015C	29 March 2002	Ariane 44L SPELDA	12 April 2017

Note: Data do not include re-entering debris of objects which remain in orbit or which have previously re-entered the atmosphere

* The registration data are reproduced in the form in which they were received

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Annex III

Additional information provided by France in conformity with article IV, paragraph 2, of the Convention on Registration of Objects Launched into Outer Space on space objects registered by France as at 31 December 2017*

Table 1
Satellites registered by France and operating in low Earth orbit[a]

No.	*Registration number*	*Satellite*	*Type of orbit*
1.	2004-049A	Helios 2A space observation satellite	Polar orbit
2.	2006-016B	CALIPSO satellite for three-dimensional characterization of clouds and aerosols	700 km polar orbit
3.	2008-032A	French-American Jason-2 oceanography satellite	1 330 km orbit inclined at 66°
4.	2009-073A	Helios 2B space observation satellite	Polar orbit
5.	2010-054A	Globalstar M079 communication satellite	1 400 km orbit inclined at 52°
6.	2010-054B	Globalstar M074 communication satellite	1 400 km orbit inclined at 52°
7.	2010-054C	Globalstar M076 communication satellite	1 400 km orbit inclined at 52°
8.	2010-054D	Globalstar M077 communication satellite	1 400 km orbit inclined at 52°
9.	2010-054E	Globalstar M075 communication satellite	1 400 km orbit inclined at 52°
10.	2010-054F	Globalstar M073 communication satellite	1 400 km orbit inclined at 52°
11.	2011-033A	Globalstar M083 communication satellite	1 400 km orbit inclined at 52°
12.	2011-033B	Globalstar M088 communication satellite	1 400 km orbit inclined at 52°
13.	2011-033C	Globalstar M091 communication satellite	1 400 km orbit inclined at 52°
14.	2011-033D	Globalstar M085 communication satellite	1 400 km orbit inclined at 52°
15.	2011-033E	Globalstar M081 communication satellite	1 400 km orbit inclined at 52°
16.	2011-033F	Globalstar M089 communication satellite	1 400 km orbit inclined at 52°
17.	2011-076A	ELISA W11 listening system microsatellite	Polar orbit
18.	2011-076B	ELISA E24 listening system microsatellite	Polar orbit
19.	2011-076C	ELISA W23 listening system microsatellite	Polar orbit
20.	2011-076D	ELISA E12 listening system microsatellite	Polar orbit

* The registration data are reproduced in the form in which they were received.

No.	*Registration number*	*Satellite*	*Type of orbit*
21.	2011-076F	Pleiades-1A Earth observation satellite	700 km polar orbit
22.	2011-080A	Globalstar M084 communication satellite	1 400 km orbit inclined at 52°
23.	2011-080B	Globalstar M080 communication satellite	1 400 km orbit inclined at 52°
24.	2011-080C	Globalstar M082 communication satellite	1 400 km orbit inclined at 52°
25.	2011-080D	Globalstar M092 communication satellite	1 400 km orbit inclined at 52°
26.	2011-080E	Globalstar M090 communication satellite	1 400 km orbit inclined at 52°
27.	2011-080F	Globalstar M086 communication satellite	1 400 km orbit inclined at 52°
28.	2012-047A	SPOT 6 Earth observation satellite	700 km polar orbit
29.	2012-061A	Pleiades-1B Earth observation satellite	700 km polar orbit
30.	2013-005A	Globalstar M097 communication satellite	1 400 km orbit inclined at 52°
31.	2013-005B	Globalstar M093 communication satellite	1 400 km orbit inclined at 52°
32.	2013-005C	Globalstar M094 communication satellite	1 400 km orbit inclined at 52°
33.	2013-005D	Globalstar M096 communication satellite	1 400 km orbit inclined at 52°
34.	2013-005E	Globalstar M078 communication satellite	1 400 km orbit inclined at 52°
35.	2013-005F	Globalstar M095 communication satellite	1 400 km orbit inclined at 52°
36.	2016-025B	MicroScope scientific satellite	700 km orbit inclined at 98°
37.	**2017-036AD**	**Robusta 1B**	**505 km orbit inclined at 97°**

[a] Bold font denotes new additions to table for 2017.

Table 2
Satellites registered by France and operating in geostationary orbit[a]

No.	*Registration number*	*Satellite*	*Orbital position*
1.	2000-019A	Eutelsat 16C telecommunications satellite (formerly SESAT 1)	16° E
2.	**2000-028A**	**Eutelsat 12 West C telecommunications satellite (formerly Eutelsat 80A, Eutelsat 88A, Eutelsat-70C and Eutelsat 36A)**	**12.5° W**
3.	2001-011A	Eutelsat 33C Telecommunications satellite (28A (formerly Eurobird 1))	33.1° E
4.	2001-042A	Eutelsat 12WB telecommunications satellite (8 West A (formerly Atlantic Bird 2))	12.7° W
5.	2002-035A	Eutelsat 5 telecommunications satellite West A (formerly Atlantic Bird 3)	5° W
6.	2002-040A	Eutelsat 36WA telecommunications satellite (formerly Eutelsat 12 WA and Atlantic Bird 1)	36° W
7.	2003-043A	Eutelsat 31 A telecommunications satellite (formerly 33A, Eurobird 3 and eBird)	30.8° E
8.	2004-008A	Eutelsat 7A telecommunications satellite (formerly W3A)	7° E

No.	*Registration number*	*Satellite*	*Orbital position*
9.	2005-041B	Syracuse 3A telecommunications satellite	47° E
10.	2006-007B	Hot Bird 13E telecommunications satellite (formerly Eutelsat 9A, formerly Eurobird 9A and Hot Bird 7A)	13° E
11.	2006-032A	Eutelsat Hot Bird 13B telecommunications satellite (formerly Hot Bird 8)	13° E
12.	2006-033B	Syracuse 3B telecommunications satellite	5° W
13.	2008-065A	Eutelsat Hot Bird 13C telecommunications satellite (formerly Hot Bird 9)	13° E
14.	2008-065B	Eutelsat 48D telecommunications satellite (formerly 28B, Eutelsat 48B and W2M)	48.1° E
15.	2009-008B	Eutelsat 33E telecommunications satellite (formerly Eutelsat Hot Bird 13D, Eutelsat 3C, Atlantic Bird 4A and Hot Bird 10)	33.1° E
16.	2009-016A	Eutelsat 10A telecommunications satellite (formerly W2A)	10° E
17.	2009-065A	Eutelsat 36B telecommunications satellite (formerly W7)	35.9° E
18.	2010-069A	Eutelsat KA-SAT 9A telecommunications satellite (formerly KA-SAT)	9° E
19.	2011-051A	Eutelsat 7 West A telecommunications satellite (formerly Atlantic BIRD 7)	7.3° W
20.	2011-057A	Eutelsat 16A telecommunications satellite (formerly W3C)	16° E
21.	2012-062B	Eutelsat 21B telecommunications satellite (formerly W6A)	21.5° E
22.	2012-069A	Eutelsat 70B telecommunications satellite (formerly W5A)	70.5° E
23.	2013-022A	Eutelsat 7B telecommunications satellite (3D (formerly W3D))	7° E
24.	2013-044A	Eutelsat 25B telecommunications satellite (formerly EB 2A)	25.5° E
25.	2014-006B	Athena-Fidus telecommunications satellite	25° E
26.	2014-030A	Eutelsat 3B telecommunications satellite	3.1° E
27.	2015-039B	Eutelsat 8 West B telecommunications satellite	8° W
28.	2016-005A	Eutelsat 9B telecommunications satellite	9° E
29.	2016-014A	Eutelsat 65WA telecommunications satellite	65° W
30.	**2017-029B**	**Eutelsat 172B telecommunications satellite**	**172° E**

Table 3
French satellites still in orbit but no longer operational[a]

No.	*Registration number*	*Satellite*	*Orbit*
1.	1965-096A	A1 experimental satellite (Astérix)	Low Earth orbit (LEO)
2.	1965-101A	FR-1 technological satellite	LEO
3.	1966-013A	Diapason D1 experimental satellite	LEO
4.	1967-011A	Diadème 1 experimental satellite	LEO

No.	*Registration number*	*Satellite*	*Orbit*
5	1967-014A	Diadème 2 experimental satellite	LEO
6	1971-071A	EOLE 1 (CAS-A) experimental data-collection satellite	LEO
7	1974-101A	Symphonie 1 experimental telecommunications satellite	Geostationary Earth orbit (GEO)
8	1975-010A	Starlette scientific satellite	LEO
9	1975-077A	Symphonie 2 experimental telecommunications satellite	GEO
10	1983-058A	Eutelsat I-F1 (ECS 1) telecommunications satellite (European Space Agency (ESA))	GEO
11	1984-081A	Eutelsat I-F2 (ECS 2) telecommunications satellite (ESA)	GEO
12	1984-081B	Telecom 1A telecommunications satellite	GEO
13	1985-035B	Telecom 1B telecommunications satellite	GEO
14	1986-019A	SPOT 1 Earth observation satellite (deorbiting manoeuvres effected in November 2003 to lower the satellite's perigee to below 600 km with a view to achieving re-entry within 25 years)	LEO
15	1987-078B	Eutelsat I-F4 (ECS 4) telecommunications satellite	GEO
16	1988-018B	Telecom 1C telecommunications satellite	GEO
17	1988-063B	Eutelsat I-F5 (ECS 5) telecommunications satellite (ESA)	GEO
18	1988-098A	TDF1 live television satellite	GEO
19	1990-005A	SPOT 2 Earth observation satellite (deorbiting manoeuvres effected on 29 July 2009 to lower the satellite's perigee to below 600 km with a view to achieving re-entry within 25 years)	LEO
20	1990-063A	TDF 2 live television satellite	GEO
21	1990-079B	Eutelsat II-F1 telecommunications satellite	GEO
22	1991-003B	Eutelsat II-F2 telecommunications satellite	GEO
23	1991-050E	SARA amateur radio satellite	LEO
24	1991-083A	Eutelsat II-F3 telecommunications satellite	GEO
25	1991-084A	Telecom 2A telecommunications satellite	GEO
26	1992-021A	Telecom 2B telecommunications satellite	GEO
27	1992-041B	Eutelsat II-F4 telecommunications satellite	GEO
28	1992-052C	S80/T technological satellite	LEO
29	1993-031B	ARSENE amateur radio satellite (perigee ~17 000 km)	Geostationary transfer orbit (GTO)
30	1993-061A	SPOT 3 Earth observation satellite (orbit > 800 km)	LEO
31	1993-061B	Stella scientific satellite (800 km)	LEO
32	1995-016B	Hot Bird 1 telecommunications satellite (Eutelsat II-F6)	GEO
33	1995-033A	Helios 1A observation satellite (deactivated in February 2012 following deorbiting manoeuvres)	LEO

No.	*Registration number*	*Satellite*	*Orbit*
34.	1995-033B	CERISE research satellite (orbit ~600 km)	LEO
35.	1995-067A	Telecom 2C telecommunications satellite	GEO
36.	1996-044B	Telecom 2D telecommunications satellite (deactivated in February 2012 following deorbiting manoeuvres)	GEO
37.	**1996-067A**	**Eutelsat 48A telecommunications satellite (formerly W48, Eurobird 9 and Hot Bird 2)**	**GEO**
38.	1997-049A	Telecommunications satellite W75 (formerly Eurobird 4 and Hot Bird 3) (deactivated in July 2011 following deorbiting manoeuvres)	GEO
39.	1998-013A	Eutelsat 16B telecommunications satellite (formerly Eurobird 16 and Hot Bird 4)	GEO
40.	1998-017A	SPOT 4 Earth observation satellite (820 km sun-synchronous orbit; ceased operating on 29 June 2013)	LEO
41.	1998-056A	Eutelsat W2 telecommunications satellite (deactivated in March 2010 following deorbiting manoeuvres)	GEO
42.	1998-057A	Telecommunications satellite Eutelsat 25A (formerly Eurobird 2 and Hot Bird 5) (redeployed and renamed Eutelsat 4B in 2013; deactivated in September 2013 following deorbiting manoeuvres)	GEO
43.	1999-018A	Telecommunications satellite Eutelsat 21A (formerly W6 and W3) (redeployed and renamed Eutelsat 48C in 2013; decommissioned on 9 November 2014)	GEO
44.	1999-064A	Helios 1B space observation satellite (ceased operating on 21 October 2004; perigee ~630 km)	LEO
45.	1999-064B	Clémentine experimental satellite (perigee ~600 km)	LEO
46.	2000-052A	Telecommunications satellite Eurobird 4A (formerly W1) (deactivated in February 2012 following deorbiting manoeuvres)	GEO
47.	2001-055A	French-American Jason-2 oceanography satellite (orbit inclined at 66°; mission ended on 3 July 2013)	LEO
48.	2002-021A	SPOT 5 Earth observation satellite (820 km sun-synchronous orbit)	LEO
49.	2002-021B	IDEFIX amateur radio satellite (attached to 3rd stage of Ariane 4-V151 launcher; orbit ~800 km)	LEO
50.	2002-038A	Eutelsat 70D telecommunications satellite (formerly Hot Bird 13A) (decommissioned on 7 August 2016)	GEO
51.	2002-051A	Eutelsat 70A telecommunications satellite (formerly W5) (redeployed and renamed Eutelsat 25C in 2013, then Eutelsat 33B)	GEO
52.	2004-025C	DEMETER scientific microsatellite (scientific use terminated in December 2010; deactivated in February 2011; orbit 650 km)	LEO
53.	2004-049C	Essaim 1 satellite for characterization of Earth's electromagnetic environment (ceased operating in October 2010, re-entry in less than 25 years)	LEO
54.	2004-049D	Essaim 2 satellite for characterization of Earth's electromagnetic environment (ceased operating in October 2010, re-entry in less than 25 years)	LEO

No.	Registration number	Satellite	Orbit
55.	2004-049E	Essaim 3 satellite for characterization of Earth's electromagnetic environment (ceased operating in October 2010, re-entry in less than 25 years)	LEO
56.	2004-049F	Essaim 4 satellite for characterization of Earth's electromagnetic environment (ceased operating in October 2010, re-entry in less than 25 years)	LEO
57.	2004-049G	Polarization and Anisotropy of Reflectances for Atmospheric Sciences coupled with Observations from a Lidar (PARASOL) microsatellite for characterization of the radiative and microphysical properties of clouds and aerosols (700 km polar orbit, ceased operating on 18 December 2013)	LEO
58.	2006-063A	Convection, Rotation and Planetary Transits (COROT) satellite for the study of stars and exoplanet detection (end of lifetime on 17 June 2014)	LEO
59.	2009-008C	Spirale A experimental satellite (deactivated in early 2011)	GTO
60.	2009-008D	Spirale B experimental satellite (deactivated in early 2011)	GTO
61.	2010-028A	Picard microsatellite for solar research (end of lifetime on 4 April 2014)	LEO
62.	2010-056A	Eutelsat W3B telecommunications satellite (failed launch into geostationary orbit, remains in GTO)	GTO

[a] Bold font denotes new additions to table for 2017.